

Claims

I claim:

1. A system for providing pressurized water to a set of water inlets in a bathing enclosure, the system comprising:
 - at least one source of pressurized water;
 - at least one manifold having at least one inlet in fluid communication with the at least one source of pressurized water and a plurality of outlets in fluid communication with the set of water inlets; and
 - a user-operable diverter configured to divert at least some of the pressurized water away from the manifold and to the bathing enclosure.
2. The system as recited in claim 1, wherein the user-operable diverter is positioned upstream of the manifold.
3. The system as recited in claim 1, wherein the user-operable diverter comprises a variable user-operable diverter.
4. The system as recited in claim 1, wherein the set of water inlets comprise a plurality of first water inlets having a first pressure drop to the flow of water therethrough, and wherein the bathing enclosure comprises at least one second water inlet comprising a second pressure drop to the flow of water therethrough, wherein the user-operable diverter diverts at least some of the pressurized water to the at least one second water inlet of the bathing enclosure wherein the second pressure drop is less than the first pressure drop.
5. The system as recited in claim 1, wherein the second pressure drop is at least 50% less than the first pressure drop.
6. The system as recited in claim 1, wherein the system further comprises at least one conduit positioned between the at least one source of pressurized water and the at

least one manifold inlet, and wherein the user-operable diverter is in fluid communication with the at least one conduit.

7. The system as recited in claim 1, wherein the system further comprises at least one conduit positioned between at least one of the plurality of manifold outlets and the set of water inlets, and wherein the user-operable diverter is positioned in the at least one conduit.

8. The system as recited in claim 1, wherein the user-operable diverter comprises a valve.

9. The system as recited in claim 1, wherein the at least one source of pressurized water comprises a plurality of pumps and wherein the user-operable diverter comprises a plurality of valves.

10. The system as recited in claim 1, wherein the bathing enclosure comprises at least one foot well, and wherein the user-operable diverter diverts water to the at least one foot well.

11. The system as recited in claim 1, wherein the bathing enclosure comprises one of a pool, a tub, a spa, a shower, and a bath.

12. A system for providing pressurized water to a set of water inlets in a bathing enclosure, the system comprising:
- at least one source of pressurized water;
 - at least one manifold having at least one inlet in fluid communication with the at least one source of pressurized water and a plurality of outlets in fluid communication with the set of water inlets; and
 - a user-operable diverter configured to divert at least some of the pressurized water away from the set of water inlets and to the bathing enclosure.
13. The system as recited in claim 12, wherein the user-operable diverter is positioned upstream of the manifold.
14. The system as recited in claim 12, wherein the user-operable diverter comprises a variable user-operable diverter.
15. The system as recited in claim 12, wherein the set of water inlets comprise a plurality of first water inlets having a first pressure drop to the flow of water therethrough, and wherein the bathing enclosure comprises at least one second water inlet comprising a second pressure drop to the flow of water therethrough, wherein the user-operable diverter diverts at least some of the pressurized water to the at least one second water inlet of the bathing enclosure wherein the second pressure drop is less than the first pressure drop.
16. The system as recited in claim 12, wherein the second pressure drop is at least 50% less than the first pressure drop.
17. The system as recited in claim 12, wherein the system further comprises at least one conduit positioned between the at least one source of pressurized water and the at least one manifold inlet, and wherein the user-operable diverter is in fluid communication with the at least one conduit.

18. The system as recited in claim 12, wherein the system further comprises at least one conduit positioned between at least one of the plurality of manifold outlets and the set of water inlets, and wherein the user-operable diverter is positioned in the at least one conduit.

19. The system as recited in claim 12, wherein the user-operable diverter comprises a valve.

20. The system as recited in claim 12, wherein the at least one source of pressurized water comprises a plurality of pumps and wherein the user-operable diverter comprises a plurality of valves.

21. The system as recited in claim 12, wherein the bathing enclosure comprises at least one foot well, and wherein the user-operable diverter diverts water to the at least one foot well.

22. The system as recited in claim 12, wherein the bathing enclosure comprises one of a pool, a tub, a spa, a shower, and a bath.

23. A method for providing pressurized water to a set of water inlets in a bathing enclosure, the method comprising:
- providing at least one source of pressurized water;
 - providing at least one manifold having an inlet in fluid communication with the at least one source of pressurized water and a plurality of outlets;
 - distributing the pressurized water from the plurality of outlets of the at least one manifold to the set of water inlets; and
 - diverting at least some of the pressurized water away from the set of water inlets and to the bathing enclosure.
24. The method as recited in claim 23, wherein the method further comprises:
- providing at least one conduit positioned between the at least one source of pressurized water and the at least one manifold inlet, and
 - diverting at least some of the pressurized water away from the set of water inlets comprises diverting at least some of the pressurized water from the at least one conduit.
25. The method as recited in claim 23, wherein the method further comprises providing at least one conduit positioned between at least one of the plurality of manifold outlets and the set of water inlets, and wherein diverting at least some of the pressurized water comprises diverting at least some of the pressurized water from the at least one conduit.
26. The method as recited in claim 23, wherein diverting at least some of the pressurized water comprises diverting at least some of the pressurized water wherein the volume of flow of pressurized water distributed to at least one of the plurality of water inlets is reduced.
27. The method as recited in claim 23, wherein diverting at least some of the pressurized water away from the set of water inlets comprises diverting pressurized water away from the at least one manifold and to the bathing enclosure.

28. The method as recited in claim 23, wherein the bathing enclosure comprises at least one foot well, and wherein diverting at least some of the pressurized water comprises directing the diverted pressurized water to the at least one foot well.

29. The method as recited in claim 23, wherein the set of water inlets comprise a plurality first water inlets having a first pressure drop to the flow of water therethrough, and wherein the bathing enclosure comprises at least one second water inlet comprising a second pressure drop to the flow of water therethrough, wherein diverting at least some of the pressurized water comprises diverting at least some pressurized water to the at least one second water inlet wherein the second pressure drop is less than the first pressure drop.

30. A method for providing pressurized water to a set of water inlets in a bathing enclosure, the method comprising:

providing pressurized water to a manifold, the manifold being in fluid communication with a first set of water inlets in a bathing enclosure; and

manually diverting at least some of the pressurized water away from the first set of water inlets to one or more second water inlets in the bathing enclosure, wherein the pressure drop across the one or more second water inlets is less than the pressure drop across the first set of water inlets.

31. The method as recited in claim 30, wherein the pressure drop across the one or more second water inlets is at least 50% less than the pressure drop across the first set of water inlets.

32. The method as recited in claim 30, wherein the manifold comprises at least one inlet for pressurized water, and the method further comprises providing at least one conduit in fluid communication with the at least one manifold inlet, and wherein manually diverting comprises manually diverting at least some of the pressurized water from the at least one conduit.

33. The method as recited in claim 30, wherein the manifold comprises a plurality of outlets, the method further comprises providing a plurality of conduits in fluid communication with at least some of the plurality of outlets, and wherein manually diverting comprises manually diverting at least some of the pressurized water from at least one of the plurality of conduits.

34. The method as recited in claim 30, wherein the pressure drop across the one or more second water inlets is less than the pressure drop across each of the water inlets of the first set of water inlets.

35. A system for providing pressurized water jets to a bathing enclosure, the system comprising:

- at least one single speed pump for providing a source of pressurized water;
- at least one manifold having at least one inlet and a plurality of outlets, the at least one inlet in fluid communication with the at least one single speed pump;
- a set of water jets adapted for introducing the pressurized water to the bathing enclosure, the set of water jets in fluid communication with the plurality of outlets of the at least one manifold; and
- a variable diverter configured to divert at least some of the pressurized water away from the set of water jets and to the bathing enclosure.

36. The system as recited in claim 35, wherein the variable diverter comprises at least one valve.

37. The system as recited in claim 36, wherein the at least one valve comprises at least one variable pressure relief valve.

38. The system as recited in claim 36, wherein the system further comprises at least one conduit for transferring pressurized water from the source of pressurized water to the at least one manifold, and wherein the at least one valve is in fluid communication with the at least one conduit.

39. The system as recited in claim 35, wherein the at least one source of pressurized water comprises a plurality of pumps and wherein the variable diverter comprises a plurality of valves.

40. The system as recited in claim 35, wherein the bathing enclosure comprises at least one foot well, and wherein the variable diverter diverts at least some of the pressurized water to the at least one foot well.

41. The system as recited in claim 35, wherein the bathing enclosure comprises at least one seat and wherein the set of water jets is positioned in the at least one seat.

42. The system as recited in claim 35, wherein the bathing enclosure comprises one of a pool, a tub, a spa, a shower, and a bath.

43. A pressure relief valve for a bathing enclosure, the pressure relief valve comprising:

- a cylindrical housing having an open first end comprising an outlet and a second end opposite the open first end;

- an inlet positioned between the outlet and the second end of the cylindrical housing, the inlet providing water having a pressure;

- a barrier positioned in the cylindrical housing to substantially hydraulically isolate the inlet from the second end of the cylindrical housing;

- an orifice assembly mounted in the cylindrical housing between the barrier and the outlet, the orifice assembly comprising:

 - a hollow valve body mounted in the open first end of the cylindrical housing, the hollow valve body having a closed first end having an orifice and an open second end; and

 - an orifice cover mounted over the orifice of the valve body, the orifice cover mounted to resist deflection relative to the valve body in response to the pressure of the water; and

- means for varying the resistance to deflection of the orifice cover in response to the pressure of the water wherein the flow of water from the inlet to the outlet is varied.

44. The pressure relief valve recited in claim 43, wherein the pressure relief valve further comprises a valve actuator mounted in the second end of the cylindrical housing, and wherein the means for varying the resistance of the deflection of the orifice cover is controlled by the valve actuator.

45. The pressure relief valve recited in claim 44, wherein the orifice cover is mounted on a first rod and the first rod is operatively connected to the valve actuator.

46. The pressure relief valve recited in claim 45, wherein the valve actuator comprises a second rod operatively connected to the valve actuator, and wherein the first rod is operatively connected to the second rod.

47. The pressure relief valve recited in claim 46, wherein the first rod is operatively connected to the hollow valve body by means of a coil spring.

48. The pressure relief valve recited in claim 43, further comprising means for mounting the variable pressure relief valve to the bathing enclosure.